



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/393,647	09/10/1999	HERBERT WOLTER	060953/0122	3048

7590 02/17/2004

FOLEY & LARDNER  
3000 K STREET N W  
SUITE 500 P O BOX 25696  
WASHINGTON, DC 200078696

EXAMINER

FORTUNA, ANA M

ART UNIT PAPER NUMBER

1723

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/393,647	Applicant(s) WOLTER ET AL. <span style="float: right;">eb</span>
	Examiner Ana M Fortuna	Art Unit 1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/28/03.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1723

### **DETAILED ACTION**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action, dated 10/23/03, is persuasive and, therefore, the finality of that action is withdrawn. In a telephone conversation in December 03, and January 05, 2004 Mr. Stephen Bent requested reconsideration of the finality of the last Office Action, the request is to consider additional species, as approved by the SPE of this Art Unit. The election of species has also been withdrawn.

### ***Claim Rejections - 35 USC § 112***

2. Claims 1-3 and 5-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is discussed in paper No. 19 (Office action dated 3/23/03), which is maintained. The terms such as "optionally" (multiplicity of optionally), and "or "if required", in combination with "optionally", renders the claim indefinite as to what embodiments are intended.

EX parte Cordova, 10 USPQ2d 1949 (BDPat. App. & Inter. 89). In the instance where the list of potential alternatives can vary and ambiguity arises, then it is proper to make a rejection under 35 U.S.C. 112, second paragraph and explain why there

### ***Specification***

3. The disclosure is objected to because of the following informalities: the specification in page 5-6 describes the compound of the formula I, and further describes

Art Unit: 1723

the equivalence of R, R<sub>1</sub>, ... R<sub>4</sub>, etc. the description also describes substituents R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, the later substituents are not part of the formula I. Clarification is required.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 3, 5, 6, 7, 11-17, 18, 19, 20, 21 (specie III), 23, 25, 27, (species IV), are rejected under 35 U.S.C. 103(a) as being unpatentable over Scholze et al (4,238,590)(hereinafter '590). Reference '590 discloses the process of making a semi permeable membrane and its use, the membrane of claim 1 (formulas IV, V, and polycondensates from its mixture) (abstract, column 1, lines 59-68, column 2, lines 2-3. With regard to the membrane made from formula III, if c=0, and b=0, the formula claimed is reduced to X<sub>2</sub>SiB, which for the groups B and X, is equivalent to (C<sub>6</sub>H<sub>5</sub>)Si Cl<sub>2</sub>, disclosed in column 3, line 65 of reference '490. X will be and halogen, and B can include at least two C=C double bonds, as claimed in claim 1. As to the membrane made of a compound of the formula IV (YaSiX<sub>2</sub>R<sub>4</sub>-1-x)), reference '490 teaches the equivalent formula, e.g. formula III (column 2, lines 4-9), when the corresponding, in which R, R', and Y are substitute as defined. The compound of formula V as claimed, although it is not required in the present invention, is also

Art Unit: 1723

disclosed in '490 formula II, e.g. including hydrogen or halogen, and alkenyl groups attached to Si.

As to claim 2, the reference above discloses addition of a catalyst and pore generating additive, e.g. water inorganic bases, acids, and pore former are lower alcohols (column 4, lines 30-61). As to claims 5, 6, 18, 19 the membrane as hollow fiber or tubular membrane with or without a support (film) is disclosed (column 5, lines 51-59, column 6, lines 1-24). The addition of salt as claimed in claim 14, is disclosed in the above reference (column 4, lines 19-29).

As to claims 11 -13, mixture of silane compounds including the claimed groups are disclosed, and includes the above discussed formulas, in particular formula III of the patent ('490). Subjecting the membrane to drying and further thermal treatment (curing) is also disclosed (column 5, lines 29-41), as claimed in steps b, c, d of claim 1.

The membrane of claim 16, and the process of claim 17 are also disclosed (column 14, claims 16-17 of patent '490, and column 6, lines 39-56). As to claim 15, the removal of remaining water or alcohol from the membrane, by the thermal treatment is inherent of the process due to its volatility, therefore inherently forming pores in the membrane, together with the salts.

The viscosity of the hydrolytic polycondensate is not disclosed in '590, however, the membrane is disclosed as films having a thickness between 50 to 1000 microns (column 6, lines 14-24). One skilled in the art at the time the invention was made can conclude that based on the membrane thickness, the polycondensate was of low viscosity, since the thickness is inversely proportional to the viscosity, e.g. the more

Art Unit: 1723

viscous the membrane solution of hydrolysate, more thick membranes can be produced. One skilled in the art at the time the invention was made, will have been motivated based on the compositions suggested in '490 (column 6, last paragraph, and examples, column 8, lines 10-68, through column 11) to select compositions generating low thickness membranes, in order to increase the permeation of permeable components from the membrane.

As to claim 20, the inclusion of mercapto groups in the membrane is disclosed in column 2, lines 22). Claims 21, 25, 27 (specie III) have been discussed above including the temperature treatment or curing, with respect to the formula III.

As to claims 23 the double bond compound is illustrate in the formula pertaining to group III (column 3, line 65 of '490).

***Allowable Subject Matter***

6. Claims 1-3, 5-8, 11-20 (species I, II, VI, and their combinations), would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims, and if rewritten to direct the claim to the specific allowed formulas or species in the membrane indicated in this paragraph.

7. Claims 21-26, (species I, II, and VI, and its combinations would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Combinations of species of the formulas I, II, VI, and any of the rejected species III, IV, V, would also be allowed.

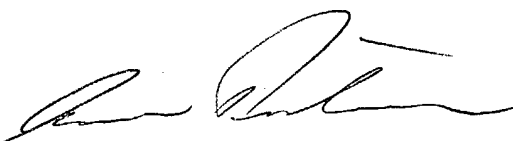
Art Unit: 1723

8. Claims 3, 5, 6, 8, 9, 10, 24, 26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph. The combination of the species of claim1, and addition copolymerizable monomer or oligomer, or the acrylate or methacrylate groups is not clearly disclosed in reference '490. The combinations with compound of the formula VI has also not disclosed in the discussed reference.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ana M Fortuna  
Primary Examiner  
Art Unit 1723

AMF\*\*\*

Application/Control Number: 09/393,647

Page 7

Art Unit: 1723

January 22, 2004